

Medicine Lake National Wildlife Refuge
Medicine Lake, Montana
January 25, 1954

WATER MANAGEMENT PLAN
1954
GENERAL

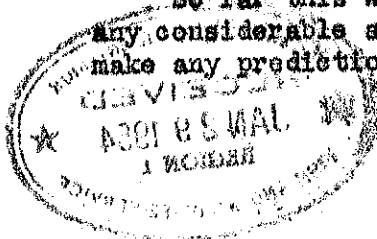
From both water management and production standpoints, the past year was highly satisfactory. After a slow start in the first four months, precipitation increased to an all-time high record of 19.08 in. With this above-normal precipitation came four heavy floods, two from the north down Big Muddy Creek, one from the northeast down Lake and Cottonwood Creeks, and one from the southeast into the Homestead Unit via Sheep Creek. All of these floods came in mid-summer as a result of cloudbursts and made management somewhat difficult since they came after the period for normal spring run-off and were utterly unpredictable.

Medicine Lake had been allowed to fill nearly to the 1943 foot level approved to insure a sufficient water supply to refill the Homestead Unit impoundments after the completion of the new spillway. The sudden dumping of the three floods into Medicine Lake raised the water to undesirable high levels because of a lack of means to bypass the flood flow into the main channel of the Big Muddy and lack of fall at the outlet to permit more rapid dispersal. As a result some refuge buildings were flooded, dikes and road fills were damaged and considerable loss of wildlife was suffered.

It is our contention that some means must be provided for by-passing undesirable flood water at the upper end of the diversion canal if such damage as sustained in 1952 and 1953 is to be avoided in the future.

Levels of all impoundments at freeze-up time this winter were at or near the 1953 approved stage, with the exception of Medicine Lake and Homestead Unit, which were only slightly lower.

So far this winter there has not been enough snow to indicate any considerable spring run-off, but it is still too early to make any predictions in that line.



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Katy's Lake held up well and produced the most aquatic food and birds of all areas on the refuge. It received some flood water in July when high water poured over the flash boards in the structure on the eastern bank of Unit No. 12. No signs of botulism could be found at any time.

The up-stream units, Nos. 10, 11, and 12 were well filled during the summer and can usually be expected to hold up well unless drawn down to fill Medicine Lake. Since this is seldom necessary, these units should be maintained as near spill levels as possible.

Medicine Lake seems to provide the best marginal facilities for waterfowl if it is maintained at or near the 1943 for the first half of the summer and the gradual drop from evaporation and release of sufficient water to keep the Homestead Unit at desired level will not be great enough to require any additional water from the up-stream impoundments.

Homestead Unit should be a highly productive unit this year as the new spillway will allow storage of ample water to maintain a desirable depth over the flat lake beds.

RECOMMENDATIONS

For 1954 we submit the following recommendations for water levels.

<u>Unit</u>	<u>Spill Level</u>	<u>Present Level</u>	<u>Proposed Max. 1954 Levels</u>
Katy's Lake	No spillway	1953.74	1953.00
No. 4 (Med. Lake)	1943.02	1941.80	1953.00* 1943.01
No. 6 (Homestead)	1937.85	1938.80	1937.85
No. 10	1945.50	(gauge out)	1945.50
No. 11	1952.54	1951.90	1952.54
No. 12	1956.93	1954.66	1954.00

*Medicine Lake (No. 4) level should be held as near the 1943 ft. level as possible until July, then it could be drawn down to permit maintenance of the Homestead Unit (No. 6).

As will be seen, the above recommendations are identical with the approved 1953 levels. It is believed that the best results can be obtained at these stages.

Elmo G. Adams,
Refuge Manager.

